AIR COMMAND AND STAFF COLLEGE

STUDENT REPORT

CONTRACT PRICING HANDBOOK

PMO TACTICAL MANAGEMENT INFORMATION SYSTEMS

MAJOR DONALD J. CRABTREE 85-0570

"insights into tomorrow"

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TITLE CONTRACT PRICING HANDBOOK
PMO TACTICAL MANAGEMENT INFORMATION SYSTEMS

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This handbook provides a guide to contract pricing which is designed specifically to assist new personnel within the Project Management Office of Tactical Management Information Systems, USA.

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PREFACE

> Contract pricing is an art. Subjective evaluation is necessary because of the error inherent in estimates and because it is necessary to test for reasonableness, economy, relevancy, probability, and materiality. (2:2(i))

PURPOSE. This handbook provides a guide to contract pricing which will assist new personnel, within Tactical Management Information Systems (TACMIS), review contractor price proposals.

NEED. TACMIS is routinely tasked to review contractor price proposals. (8:--) The contracting officer is not required by the Federal Acquisition Regulation (FAR) to have all contractor price proposals audited. An audit is the systematic review of all records, documents, and statistics to determine the accuracy of the financial statements and of the facts they represent. (2:1A-B2) An audit is a time consuming process which may be determined unnecessary by the contracting officer. The contracting officer is still obligated, though, to ensure the price of the contracted product or service is fair and reasonable. Tasking the Project Manager or his representative to review contractor price proposals is but one method the contracting officer may pursue in fulfilling that obligation. Even though contract pricing is a procurement function, success largely depends on the active role of the technical personnel and organizations. If these functions are separate, the technical organization should be manned to provide support to the contracting officer. (2:1A3)

Historically, when an audit is performed, the contracting officers servicing TACMIS task for support in technical reviews and price negotiations. Normally, the contracting officers and auditors are not technically proficient in the product or services being acquired for TACMIS. TACMIS' technical expertise is invaluable in establishing the amount and appropriateness of the contractor proposed labor hours. Labor and its associated costs are a significant part of the overall contractual cost, and its review materially assists the contracting officer in determining a fair and reasonable price.

STRUCTURE. This handbook consists of five chapters. It is designed around a sample contractor price proposal which is broken into three distinct sections to facilitate the explanation of price proposals. The mechanical structure and format are intentional in order to ease the incorporation of this handbook into the TACMIS Standard Operating Procedure manual. Underlined paragraph headings refer directly to entries found in the sample price proposal.

Chapter 1, Sample Price Proposal, is a proposal generated by the author. It is presented as a typical price proposal. Acronyms are not spelled out or defined to ensure that the sample price proposal reflects a typical contractor price proposal. The acronyms are spelled out and defined in the appropriate chapters which follow. The proposal simulates the price of introducing a new modem into a mobile computer system. The sample price proposal is in two parts: part one, Cost Element Summary, serves as an executive summary; part two, Cost Elements Time Phased, identifies each organization's labor hour expenditure by labor category over the time frame within which the work will be performed. The labor hours and costs, material costs, and burden rates were arbitrarily assigned by the author solely for ease of mathematical computation and do not reflect the hourly labor or burden rates of any commercial company.

Chapter 2, Header Information, is the portion of the sample price proposal which identifies the contractor, the specific price proposal, and the work breakdown structure.

Chapter 3, Labor Hours and Costs, identifies the contractor organization, amount of labor by category, and labor costs over a time phased period. Additionally, a methodology to evaluate labor hours is discussed and proposed for use by TACMIS personnel. As part of the methodology, a series of questions are posed. These questions will assist personnel ensure that all aspects of labor being performed within each organization are accounted for in the evaluation of the type and appropriateness of the labor hours.

Chapter 4, Other Costs, identifies all other costs, such as material costs, indirect costs, and profit. This chapter also addresses the mathematical computations used to derive the total cost.

Chapter 5, Summary, summarizes the handbook.

Throughout the handbook, contract pricing and procurement terms are defined, if necessary, as they are encountered. The handbook is not an "end all" to contract pricing. The handbook is intended to provide the knowledge and framework to assist in the role TACMIS shares with the contracting officer and the procurement community--that is, determine a fair and reasonable

price for the contracted product or service. The term, fair and reasonable, is defined as follows:

> A cost is reasonable if, in its nature or amount, it does not exceed that which would be incurred by an ordinarily prudent person in the conduct of competitive business.
>
> In determining the reasonableness of a specific cost the contracting officer shall consider:
> (i) whether the cost is of a type generally recognized as ordinary and necessary for the conduct of the contractor's business or the performance of the contract;
> (ii) the restraints or requirements imposed by such factors as generally accepted sound business...;
> (iii) the action that a prudent businessman would take in the circumstances, considering his responsibilities to the owners of the business, his employees, his customers, the Government and the public at large; and
> (iv) significant deviations from established practices of the contractor for which may unjustifiably increase the contract cost. (1:31-8)

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Major Donald J. Crabtree [redacted]. He earned his commission in the Transportation Corp through the Army ROTC program at the University of South Alabama, where he received a BS degree in Geography. Major Crabtree has served in a variety of transportation assignments, including one year in Thailand and three years in Spain. Prior to attending the United States Air Force Air Command and Staff College, he served as the Government In-Plant Representative at General Electric Space Division in King of Prussia, PA, on a computer acquisition program with the U.S. Army Computer Systems Command. Major Crabtree has an MS in Transportation Management from Florida Institute of Technology. He is a member of the Material Acquisition Management program and has attended numerous military schools.

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Chapter One

Sample Price Proposal

********** **********

COST ELEMENT SUMMARY

LABOR:

	HOURS	COST
L1	940	9885
L2	1416	17345
L3	623	9505
L4	198	6021
Total	3177	42756

OVERHEAD (125%)	53445
MATERIALS	15250
LOM	111451
G&A (20%)	22290
SUBTOTAL	133741
PROFIT (18%)	24073
TOTAL COST	157814

COMPUTER CONTRACT

COST ELEMENTS TIME PHASED

RFP No. 01 DATE 08-29-84

PROPOSING ENTITY: Byte Company, Inc.

WBS No. 01.00.01

LABOR HOURS

ORGN	CATEGORY	Jan85	Feb85	Mar85	Apr85	May85	Jun85	S/T
MTLS	L1		40	20	10	10	10	90
	L2		50	30	20	10	10	120
	L3		10	5	5	5	5	30
	L4		10	5	5	5	5	30
Total			110	60	40	30	30	270
ENGR	L1	100	50	50	50	50	10	310
	L2	350	200	200	100	50	25	925
	L3	200	75	75	50	10	5	415
	L4	50	50	50	25	5	1	81
Total		700	375	375	225	115	41	1731
MFG	L1	10	10	100	100	100	100	420
	L2	50	100	40	20	10	10	230
	L3	25	30	30	10	10	10	115
	L4	10	20	20	2	2	2	56
Total		95	160	190	132	122	122	821
QA	L1	10	10	10	10	10	10	60
	L2	50	50	5	5	5	5	120
	L3	20	20	5	2	1	1	49
	L4	10	10	1	1	1	1	24
Total		90	90	21	18	17	17	253
ILS	L1	15	15	15	5	5	5	60
	L2	6	6	6	1	1	1	21
	L3	7	5	1		1		14
	L4		1	5	1			7
Total		28	27	27	7	7	6	102

Continued:

DOLLARS

ORGN	CATEGORY	Jan85	Feb85	Mar85	Apr85	May85	Jun85	S/T
MTLS	L1		400	200	110	110	110	930
	L2		600	360	260	130	130	1480
	L3		150	75	80	80	80	465
	L4		200	100	105	105	105	615
Total			1350	735	555	425	425	3490
ENG	L1	1000	500	500	550	550	110	3210
	L2	4200	2400	2400	1300	650	325	11275
	L3	3000	1150	1150	800	130	80	6310
	L4	1000	1000	1000	525	105	21	3651
Total		9200	5050	5050	3175	1435	536	24446
MFG	L1	100	100	1000	1100	1100	1100	4500
	L2	600	1200	480	260	130	130	2800
	L3	375	450	450	160	160	160	1755
	L4	200	400	400	42	42	42	1126
Total		1275	2150	2330	1562	1432	1432	10181
QA	L1	100	100	100	110	110	110	630
	L2	600	600	80	85	85	85	1535
	L3	300	300	100	32	16	16	764
	L4	200	200	20	21	21	21	483
Total		1200	1200	300	248	232	232	3412
ILS	L1	150	150	150	55	55	55	615
	L2	72	72	72	13	13	13	255
	L3	105	75	15		16		211
	L4		20	105	21			146
Total		327	317	342	89	84	68	1227
TOTAL		12002	10067	8757	5499	3608	2823	42756
OVERHEAD		15002	12584	10946	6874	4510	3529	53445

Continued:

	Jan85	Feb85	Mar85	Apr85	May85	Jun85	S/T
MATERIALS:							
Bolt Co		50	50	50	50	50	250
Modem Co		2500	2500	2500	2500	2500	12500
Cable Co		400	400	400	400	400	2000
Bracket Co		100	100	100	100	100	500
TOTAL							15250
LOM COST							111451
G&A							22290
SUBTOTAL COST							133741
PROFIT							24073
TOTAL COST							157814

Chapter Two

Header Information

****

COMPUTER CONTRACT

COST ELEMENTS TIME PHASED

RFP No. 01 DATE 08-29-84

PROPOSING ENTITY: Byte Company, Inc.

WBS No. 01.00.01

****

COMPUTER CONTRACT. This entry identifies the generic name of the contract.

COST ELEMENTS TIME PHASED. This entry is normally a subtitle intended to demonstrate the nature or format of the document.

RFP 01. Request for Proposal Number 01. This entry uniquely identifies the price proposal. In this case the price proposal is in response to a request made by the contracting officer as the result of a new requirement by the technical organization. The RFP is jointly prepared by the technical organization and the contracting officer and specifically identifies to the contractor what work is required. (5:7-3)

PROPOSING ENTITY. This entry identifies the contractor.

WBS No. 01.00.01. Work Breakdown Structure Number. The WBS is the summary level of the work element for which cost and/or schedule performance will be reported. (3:2-1.c) It is a

"...product-oriented tree division of hardware, software, services and other work tasks which organizes, defines, and graphically displays the product to be produced as well as the work to be accomplished..." (3:B-3) by the contractor. The requirements for WBS are found in MIL-STD 881. (4:13-1) If the contract provisions incorporate MIL-STD 881, the contractor WBS will be reflected in the price proposal.

The price proposal's header information provides administrative information. The following chapter, Labor Hours and Costs, is the meat of the price proposal.

Chapter Three

Labor Hours and Costs

****

LABOR HOURS

ORGN	CATEGORY	Jan85	Feb85	Mar85	Apr85	May85	Jun85	S/T
MTLS	L1		40	20	10	10	10	90
	L2		50	30	20	10	10	120
	L3		10	5	5	5	5	30
	L4		10	5	5	5	5	30
TOTAL			110	60	40	30	30	270

****

ORGN. Organization. This entry identifies which division within the contractor's structure will expend labor to produce the product. MTLS means Materiel Division.

CATEGORY. This entry identifies the type, level, and amount of labor which is required to perform the work. The category of labor identification (L1, L2, L3, L4) will differ from contractor to contractor. There may be an explanation of the labor categories as part of the price proposal, but normally such an explanation will not be available. If TACMIS personnel are not familiar with the labor categories, they should contact the contracting officer for an explanation. An understanding of the categories of labor is important, and time spent learning the contractor labor categories will be well spent.

In this handbook, the categories of labor parallel those normally found within a contractor's organization. Category L1 is the hourly wage employee; i.e., assemblyman, dock worker, or secretary. Category L2 is the first line supervisor or a low salaried employee. Category L3 is the second line supervisor or a high level salaried position; i.e., reliability or senior engineer. Category L4 is the management level.

Jan85 - Jun85. This entry identifies the time frame during which the work will be performed.

S/T. Subtotal. This numerical entry is the horizontal sum of labor hours. It identifies the total number of hours by each category of labor.

TOTAL. This numerical entry is the vertical sum of labor hours. It is the sum of labor hours expended monthly and the sum of the S/T.

LABOR HOUR REVIEW. As stated in the preface, contract pricing is an art, and subjective evaluation is necessary. The evaluation for appropriateness and reasonableness of the category and amount of labor is the area the contracting officer depends most heavily on TACMIS personnel. (8:--) This section of the handbook provides one method which may be useful in performing the subjective evaluation of labor hours.

Labor hours within price proposals are estimates. The estimates may be based on historical data or labor standards. (2:4B18-4B23) Normally, estimates based on historical data are derived from actual time which has been recorded in the past while performing similar work. The contractor gathers the data and applies factors which may impact the work given the difference in time and possible variations in the new work to be performed. (2:4B8) A very common technique used to estimate labor hours for work which is repetitive and based on historical data is the application of learning curves. The learning curve is a calculation to project resource requirements. It is based on the theory that individuals performing repetitive work will improve and perform the work faster due to increased manual dexterity. (2:1A-B11,4B19) Essentially, the more familiar the work is, the more efficient the worker becomes. Labor standards are also used to estimate labor hours. Within certain industries, associations have developed standards or time required to perform specific work. (2:4B23-4B24) The most familiar labor standards are those used by automobile mechanics. If the contractor uses labor standards to generate labor hour estimates, TACMIS personnel should contact the contracting officer for guidance. If the labor standards require evaluation or audit, the contracting officer will task another organization.

Regardless of the methodology the contractor uses, the estimates must be realistic. An estimate is a prediction of the future. (2:2A4) The contractor will undoubtedly use his historical data bases, learning curves, and/or labor standards plus the experience of his managers to derive the labor hour estimates. The contractor will be prepared to defend his estimates, will be articulate in the methodology used, and adamant that the estimates are realistic. TACMIS personnel should be as

articulate and adamant in defense of their evaluation and prepared to substantiate their recommended positions on the labor hours. should the contracting officer request assistance during negotiation.

Many people are concerned they do not have the knowledge or skill to evaluate labor hour estimates. This handbook submits that simple logic coupled with common sense is the only skill one needs to effectively evaluate labor hour estimates. The most difficult aspect of the evaluation is to grasp the complexity of the work being performed. Complexity is defined as the comprehension of the radial impacts of the work throughout the contractor's organization.

One method to determine the complexity of the work is to systematically work backwards and sideways from the ultimate task and then logically identify what occurred to support the ultimate task. This method is a four step procedure which assists in the identification of the radial impacts within the contractor's organization. Step one is to determine the ultimate task. Step two is a logical step which identifies the obvious things which are needed in order to perform the task. Step three is a backwards step which identifies how those obvious things in step two became available. Step four is the sideways step of answering who was responsible for the obvious things in step two. The answers in step four identify complexity.

Using the handbook's simulation of a modem being installed in a mobile computer system, let's walk through the method:

Step 1: Ultimate Task: Install the modem.

Step 2: Logic: The modem, attaching hardware and cabling are available.
The laborer knows how to perform the work.

Step 3: Backwards Step: The modem and associated equipment were received.
The modem and associated equipment were ordered.
The laborer was trained or had instructions on how to perform the work.

Step 4: Sideways Step: Who received the modem and associated equipment?
Who ordered the equipment?
Who trained the laborer?
Who installs the modem?

Complexity: Installs Modem: Manufacturing/Production.
Received Modem: Shipping and Receiving.
Ordered Modem: Materiel Division.
Trained Laborer: Supervisor.
Identified Modem: Engineering.

From the ultimate task of installing the modem, the method has identified three organizations and one additional party involved with the ultimate task. To each of these, the method is applied. To continue the example, Materiel Division is used:

Step 1: Ultimate Task: Order the modem and associated equipment.

Step 2: Logic: The proper modem and associated equipment are known.

Step 3: Backwards Step: The modem and associated equipment are identified.
Authorization for purchase is available.

Step 4: Sideways Step: Who identified the modem and associated equipment?
Who authorized purchase of the material?

Complexity: Identified Modem: Engineering.
Authorized Purchase: Contracting or finance or program manager.

Additional organizations are added to the equation. The method should be applied to all organizations which are identified in the complexity.

The key to this method is step one--identifying the ultimate task. The identification of the obvious things in step two is dependent on keeping the ultimate task simple. It is appropriate for the reviewer to place himself/herself in the shoes of the individual performing the ultimate task and ask, "What would I need to perform the task?" To install the modem, it is intuitively obvious that the laborer must have the modem and know how to perform the work. Once reaching this stage the reviewer elevates himself/herself above the level of the laborer and identifies which organizations had a hand in providing those obvious things to the laborer.

The application of this method will identify the complexity of the work by identifying the radial impacts throughout the contractor's organization. It is not foolproof, and some organizations performing work may not be identified. If an organization is not identified by the method and is found in the contractor price proposal, it is neither cause for alarm, nor

justification to recommend the elimination of the contractor proposed labor hours. The reviewer should refer to the RFP and any narrative from the contractor which may explain the labor hours. For the sake of example, let's assume that the method did not identify the Integrated Logistics Support (ILS) Division but labor hours are proposed by the contractor. A review of the RFP might indicate that identification of spare parts was required. This role would be performed by the ILS Division.

Once complexity is determined, the evaluation of the amount of labor hours is required. The evaluation is not difficult. There are documents and historical records which will assist. The most useful document is the Independent Government Cost Estimate (IGCE). The IGCE is an estimate of the expected contractor cost to perform the work. The IGCE is submitted by TACMIS to the contracting officer prior to the generation and submittal of the RFP to the contractor. (8:--) The IGCE, as performed by TACMIS, lists the expected labor hours by category and amount for each organization within the contractor's structure. Research of historical files may provide a comparison between like work performed in the past. The original contract price proposal is another good source of historical data from which to draw comparisons.

A comparison of the IGCE and historical records against the price proposal will identify areas of dispute between the contractor and the government on the amount of labor hours. Areas with a disparity of greater than 10 per cent deserve attention. The individual who generated the portion of the IGCE in dispute with the contractor price proposal should review the labor hours. It is possible that the IGCE is incorrect and requires adjustment. It is also possible that the contractor's proposal is not reasonable.

The disputed areas should be documented in sufficient detail to allow the contracting officer adequate information to negotiate a more reasonable cost. The narrative for a recommended government position to the contracting officer should precisely present the rationale and/or formulas used by the reviewer which resulted in a recommendation to reduce the contractor proposed labor hours.

In reviewing the disputed areas, the reviewer must ensure that all aspects of labor performed by the contractor are considered. Contractors methods of operation vary; therefore, it is difficult to provide a narrative which would cover all possibilities. Instead of attempting to provide such a narrative, the following series of questions are posed:

Materiel Division (MTLS):

Does the required material originate outside the contractor's plant? (2:4A24)

How many vendors, suppliers, and/or subcontractors are involved?

Will the prime contractor initiate long term fixed-price contracts with their subcontractors which may require negotiations? (2:4A27)

Does the material require expediting to meet production schedules?

Will the purchase of materials be a one-time buy or a recurring buy? (4A18)

How many inbound shipments are anticipated? Does the materiel division track inbound shipments?

What amount of administration is needed to support the purchase; i.e., number of purchase orders to be prepared, typing and filing requirements?

What discrepancy reporting system is used by the contractor? What role does the materiel division play? (A discrepancy reporting system is a procedure to identify and correct defective material.)

Will trips to the vendors, suppliers, and/or subcontractors be required?

Engineering Division (ENGR):

Is a design effort required? (2:4C17)

Is an engineering analysis required to select the appropriate material?

Are unique engineering skills required, such as a reliability engineer? (2:4C16)

Is engineering testing required on the new equipment?

What level of engineering drawings are required? Will the drawings be new drawings, altered drawings, or a combination of both? What skill level is needed to produce the drawings; i.e., draftsman, designer, or engineer? (2:4C16)

Is the reliability of the system altered? Is there a reliability requirement? (2:4C17)

What role does engineering have in configuration management? What is the configuration management requirement, if any? (Configuration management is the method used to control changes in the contracted product.)

Has similar work been performed from which comparisons can be drawn? (2:4C16)

How much liaison is required between the Engineering Division and the Manufacturing/Production Division? (2:4C12)

Manufacturing/Production Division (MFG)

What subdivisions make up the Manufacturing/Production Division; i.e., shipping and receiving, assembly, testing?

What is the role of shipping and receiving? Stock control? Stock accountability? Inspection?

What role does shipping and receiving have in the discrepancy reporting system?

How long will it take to install the new equipment? Is tnere equipment in the system which will be affected by the introduction of new equipment which will require cabling, relocation or modification?

Are detailed work sheets and/or instructions required? Who prepares them? (2:4B21)

Is there a ratio between labor and supervision that can be established from historical records? (2:4B21)

Does the new equipment require modification? (2:4B29)

Is there an increase in test time due to the introduction of new equipment?

Will a change in the production plan be required? (2:4B29)

Quality Assurance (QA)

What is the QA role in relationship to the manufacturing process? (2:4B21)

What impact in terms of time does the introduction of new equipment have on testing or inspections?

Can a ratio between QA labor hours and manufacturing/production labor hours be established from previous work of a similar nature? (2:4B21)

Integrated Logistics Support (ILS):

Does the new equipment require provisioning? (Provisioning is the identification of logistical data on spare parts.)

Is there a teardown requirement? (Teardown is the disassembly of the equipment in order to check piece part dimensions and other data against engineering drawings.)

Will new Technical Manuals (TM) be required?

What role does ILS have in reliability?

Is there a contractor conducted training program which may require change?

By answering the questions, the reviewer will build a strong base from which to build his estimate of the labor hours required to perform the work. The review of disputed labor hours is very critical. The criticality of the review is evident in the next portion of this chapter where labor costs are discussed.

LABOR COST

DOLLARS

ORGN	CATEGORY	Jan85	Feb85	Mar85	Apr85	May85	Jun85	S/T
MTLS	L1		400	200	110	110	110	930
	L2		600	360	260	130	130	1480
	L3		150	75	80	80	80	465
	L4		200	100	105	105	105	615
TOTAL			1350	735	555	425	425	3490

****

LABOR COST. The labor cost portion of the price proposal is simple multiplication of the hourly labor rate times the number of labor hours in each category of labor. The hourly labor rates may be provided by the contractor as part of the price proposal, but they are not required. If the hourly labor rates are not known, the contracting officer will be able to provide them. The rates are required to perform a cost comparison which will be discussed in Chapter Four.

TACMIS personnel need not address the validity of the hourly labor rates. Another organization assists the contracting officer in verifying the validity of the labor rates. Normally, once a contract is executed, the contracting officer assigns it to a Contract Administration Services component. (5:7-1) In the case of the U.S. Army Information Systems Selection and Acquisition Activity, which services TACMIS, the administration of executed contracts is internal. To assist in the administration of the executed contracts, the acquisition activity has appointed an administrative contracting officer (ACO) at the Defense Contract Administrative Service (DCAS) office serving the region or area where the contractor's plant is located. It is the ACO who tasks auditors within DCAS to verify the validity of the hourly labor rates when requested to do so by the contracting officer. Additionally, the Defense Contract Audit Agency (DCAA) could be tasked to perform the audit. (6:iii) As part of the review, TACMIS personnel should state that the hourly labor rates were not verified.

An audit of the hourly labor rates may not be required. The proposed rates may be the same as those previously negotiated in the contract or previously audited. In many cases, the hourly labor rates are covered in Forward Pricing Arrangements. Forward Pricing Arrangements are "...written understandings negotiated between a contractor and the government to make certain rates (e.g., labor...) available for use during a specific period of time in pricing contracts or contract modifications" (2:1A-B10).

DOLLARS. This entry identifies how the monetary amounts are annotated. This particular entry, Dollars, indicates the numbers are whole dollars. An entry such as Dollars (Thousands or K) indicates the monetary amounts are annotated in thousandths, i.e., $400.00 = .4; and, $1,200.00 = 1.2 and so on.

Note: In Mar85 twenty hours of labor category L1 are expended at a cost of $200; however, in Apr85 ten hours of labor category L1 are expended at a cost of $110. The cost is $10 more than expected if the months preceding Mar85 are used as a base for labor cost. The cost increase is probably due to escalation. By definition, escalation is the term which describes the upward or downward movement of price, but normally the term escalation is associated only with an upward movement of price. (2:1A-B8) Escalation of price or rates within the price proposal is not a concern for TACMIS personnel. Escalation will be handled by the contracting officer in the same manner as the hourly labor rates. If escalation is present, a notation of the escalation should be made and reported in the review to the contracting officer. As part of the review, TACMIS personnel should state that the escalation rate was not reviewed.

The entries, CATEGORY, S/T, and TOTAL serve the same purpose as described in the previous section on Labor Hours.

Labor cost is a significant portion of the total cost of the price proposal. Chapter Four will demonstrate its significance, not in terms of the monetary amount, but as the basis for the computation of other costs.

Chapter Four

Other Costs

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	JAN85	FEB85	MAR85	APR85	MAY85	JUN85	S/T
OVERHEAD	15002	12584	10946	6874	4510	3529	53441
MATERIALS:							
Bolt Co		50	50	50	50	50	250
Modem Co		2500	2500	2500	2500	2500	12500
Cable Co		400	400	400	400	400	2000
Bracket Co		100	100	100	100	100	500
TOTAL							15250
LOM COST							111952
G&A							22390
SUBTOTAL COST							134342
PROFIT							24182
TOTAL COST							158524

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OVERHEAD. Overhead is sometimes referred to as indirect costs or burden rates. (2:5i) To understand the concept of overhead costs, a brief discussion of direct and indirect costs is required.

Direct costs are those costs "...which can be and are identified specifically for each contract" (2:5i). In the sample price proposal, the direct costs are labor and materials. Indirect costs are those costs which are plant-wide costs allocated to the contract. They "...represent supporting effort

to the main business of the company" (4:5i). Indirect costs are "...prorated to work performed in plant" (2:5i) during specific time frames. Indirect costs in the sample price proposal are overhead and general administrative (G&A) expenses.

Indirect costs cannot be directly assigned to individual projects or contracts. They are accumulated by logical cost groupings or pools and vary from company to company. (2:5A2) "Manufacturing overhead, engineering overhead and G&A expenses commonly are grouped separately. Overhead pools may be set up on a company wide basis or may be accumulated by division, plant, department or cost center" (2:5A2). In the sample price proposal, the overhead pool is company wide. Although overhead pools will differ from company to company, the variables which make up overhead are similar. Overhead costs are composed of:

Salaries and wages:
- Indirect labor
- Overtime
- Sick leave
- Holidays
- Suggestion Awards
- Vacations

Outside services:
- Maintenance (building, grounds, and machinery)
- Watchman and janitorial services

Personnel expenses:
- Compensation insurance
- Unemployment insurance
- FICA tax
- Group insurance
- Dues and subscriptions
- Retirement
- Professional training

Supplies:
- Operating supplies
- Stationary and office supplies
- Rent

Public utilities:
- Telephone
- Heat, light and power
- Water (2:5A7-5A15; 6:4-12)

Other expenses can be allocated into the overhead pool, but the above constitutes the items generally found in all overhead pools. Indirect costs are significant. In fact, indirect costs

"...comprise about two-thirds of the total in-plant cost of most defense contractors" (2:5i).

Overhead is expressed as a percentage derived by dividing the indirect costs by the total direct labor costs. (Example: Indirect costs = $1,250,000.00; Direct costs = $1,000,000.00; therefore, $1,250,000.00 divided by $1,000,000.00 = 125%). (2:5A15) TACMIS personnel are not expected to review the overhead rate. If the contracting officer requires the overhead rate to be reviewed, he will task another organization, such as DCAS or DCAA. It is very likely that the overhead rate has been previously reviewed and negotiated or is covered in a Forward Pricing Arrangement.

MATERIALS. This entry identifies the direct material costs by supplier. Direct material "...includes raw materials, purchased parts and subcontracted items required to manufacture and assemble completed products" (2:4A1). Subcontracted items can also be services performed by other than the prime contractor. (2:4A2)

There are four generally accepted methods used by contractors to generate direct material costs. They are:

1) A statistical estimate.

2) A priced bill of materials that purport to develop the average unit material cost for the procurement.

3) A priced bill of materials on the preceding item or lot, modified to develop an average estimate for the present procurement.

4) A projection of the average material cost per unit on a preceding lot or contract. (2:4A7)

The review of material costs presents a challenge to TACMIS personnel. Normally, the contractor price proposal does not indicate how the contractor generated the costs, and supporting documentation does not accompany the price proposal. If supporting documentation and an explanation of how the material costs were generated is desired, the contracting officer should be contacted for guidance on how to request the information from the contractor. Although such information is desirable, it is not necessary in order to review material costs. The following questions are posed to assist in the review of material costs:

Is the type and quantity of the material appropriate? (2:4A9)

Is there a commercial catalog available from the supplier which lists the unit costs of the material? (2:4A37)

Is the material listed in the General Services Administration (GSA) catalog?

Has the contractor historically offered material at a discount below catalog cost? Does the cost reflect such a discount? (2:4A10)

Is there like material from another supplier from which a cost comparison can be drawn?

The review should state what method was used to evaluate the material costs and provide complete justification if the recommendation is less than the contractor proposed costs. If TACMIS personnel are unable to adequately review the material costs, it is appropriate to recommend to the contracting officer that the contractor submit documentation justifying the material costs during negotiations.

CAUTION: TACMIS personnel should not contact the original manufacturer of the material and request a price. If personnel believe the original manufacturer should be contacted, the contracting officer should be contacted first.

TOTAL. This entry is the sum of the individual supplier material costs.

LOM COST. Labor, overhead and material. This entry is the sum of labor, overhead, and material costs.

G/A. General and Administrative. This entry identifies the contractor's G&A expense. G&A includes the expenses of the contractor's general and executive offices. It also includes the contractor's staff expenses; i.e., legal, accounting, financial, and public relations activities. As an indirect cost, the expenses incurred relate to the contractor's overall business and are not directly attributed to a single contract or individual project. Selling activities, to include marketing, may also be accounted for in the G&A expense. (2:5A37-5A38)

Another expense accounted for in G&A, when it clearly benefits the entire company, is Bid and Proposal. Bid and Proposal (B&P) are expenses incurred in the preparation and submission of bids on potential work, government or non-government. (1:31-22)

G&A is expressed in a percentage which is derived by dividing the G&A costs by manufacturing costs. (2:5A18) As with overhead, TACMIS personnel are not expected to review the G&A rate. The G&A

rate, as overhead, may have been previously reviewed and negotiated or is covered in a Forward Pricing Arrangement.

SUBTOTAL COST. This entry is the sum of direct labor, overhead, material, and G&A costs.

PROFIT. This entry identifies the monetary amount of profit proposed by the contractor. Profit is the "basic motive" of business and is sometimes referred to as "the wages of risk" or simply risk. (2:1A-B14) TACMIS personnel need not review the profit rate. The contracting officer will determine a fair and reasonable profit. Since profit equates to risk, it is appropriate to provide the contracting officer an assessment of the risk and a recommended profit.

TOTAL COST. This entry identifies the contractor's proposed cost to perform the work. Total cost is the sum of all direct and indirect costs minus any credits. (1:31-7) In other words, total cost is the amount TACMIS must fund.

COMPUTATION OF TOTAL COST. Algebraically the formula for computation of total cost is impressive and somewhat complicated. In reality, the mathematics is fairly simple. For the purpose of illustrating the computation, refer to Cost Element Summary in Chapter One. The computation is as follows:

First, determine labor cost. Labor cost is the summation of the multiplication of the hourly labor rate times the number of labor hours in each category of labor identification.

Second, determine overhead cost. Overhead cost is the multiplication of the overhead rate times the labor cost.

Third, determine material cost. Material cost is the sum of all direct materials.

Fourth, determine LOM cost. LOM cost is the sum of labor, overhead, and material costs.

Fifth, determine G&A cost. G&A cost is the multiplication of the G&A rate times the LOM cost.

Sixth, determine subtotal cost. Subtotal cost is the sum of LOM and G&A costs.

Seventh, determine profit. Profit is the multiplication of the profit rate times the subtotal cost.

Eight, determine total cost. Total cost is the sum of subtotal and profit. (2:8D9)

COST COMPARISON. A valuable tool for the contracting officer is a cost comparison analysis between the contractor price proposal and the review. The comparison is accomplished by substituting the review's recommended labor hours and/or material costs in the contractor price proposal format. The total cost is computed by following the format above.

Chapter Five

Summary

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A significant number of TACMIS' personnel will eventually have the opportunity to review a contractor price proposal. A basic knowledge of price proposals, format, and terminology will speed completion and improve the quality of the review.

Reviewing a contractor's price proposal provides a unique opportunity to learn about the contractor and the government procurement system. Close coordination with the procurement activity is required. Participation in negotiations between the contracting officer and the contractor is likely. Consequently, the completeness of the review is critical. During negotiations the contracting officer has only the review to substantiate the government's position on disputed labor hours. The review's rationale is the weapon to secure a fair and reasonable price.

Negotiation is a " give and take" process where both parties settle on a mutually agreeable position. The observation or active participation in the process allows one to experience first hand the adequacy of the review. The experience is worthwhile. It can drive home the importance of the review and can clearly show the strength and weakness of the review's rationale. Participation or observation will dramatically demonstrate the value of a good review and the handicap of a poor one.

It is important to give the contracting officer the best benefit of TACMIS' technical expertise and a quality review. The rationale on disputed areas must be complete and concise. Logic and formulas used to dispute the contractor price proposal must be clear and universally understood. TACMIS has a vital role and a vested interest in the price proposal and negotiations; after all, TACMIS' funds pay the total cost.

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